Version with markings to show changes made

The paragraph beginning on page 1, line 10 has been replaced by a new paragraph.

The sequence listing on pages 42-46 has been deleted and replaced by a substitute sequence listing at the end of the application.

The three (3) informal drawings have been replaced by three (3) formal drawings.

Claim 5 has been cancelled.

Claim 1 (amended). A method for denaturing or separating double-stranded nucleic acid molecules, said method comprising contacting one or more double-stranded nucleic acid molecules with a denaturant selected from the group consisting of one or more amino acid denaturants, imidazole, and one or more amino acid denaturants plus imidazole, thereby forming [under conditions sufficient to form] single-stranded nucleic acid molecules, with the proviso that said denaturant is not selected from the group consisting of asparagine and β-alanine.

Claim 2 (amended). The method of claim 1, wherein said amino acid denaturants are selected from the group consisting of one or more amino acids, [derivatives, analogs thereof or combinations thereof, and one or more] polyamino acids,

[derivatives, analogs thereof or] and combinations thereof; wherein said amino acid denaturants denature or separate double-stranded nucleic acid molecules.

Claim 3 (amended). The method of claim [2] 41, wherein said polyamino acids comprise two or more amino acids [or derivatives or analogs thereof].

Claim 4 (amended). The method of claim [2] 41, wherein said amino acid denaturants [acids] are selected from the group consisting of glycine, [alanine,] D-alanine, L-alanine, DL-alanine, arginine, [asparagine,] glutamine, isoleucine, leucine, methionine, phenylalanine, proline, serine, threonine, tryptophan, tyrosine, and valine[, and imidazole].

Claim 6 (amended). The method of claim 1, wherein the concentration of said [amino acid] denaturants ranges from about 1mM to about 500 mM.

Claim 9 (amended). A method of recovering one or more desired target nucleic acid molecules from a population of nucleic acid molecules comprising:

a) contacting said population with one or more [hypentylated] haptenylated probes[, under conditions sufficient] to permit said probe to hybridize to said desired target molecules thereby forming one or more hybridized molecules; and

b) isolating said desired target nucleic acid molecules from said probes by contacting said hybridized molecules with a denaturant selected from the group consisting of one or more amino acid denaturants, imidazole, and one or more amino acid denaturants plus imidazole.

Claim 19 (amended). The method of claim 18, further comprising treating said double-stranded nucleic acid molecules [under conditions sufficient] to render such molecules single-stranded.

Claim 20 (amended). The method of claim 19, wherein said treatment comprises contacting said double-stranded nucleic acid molecule with a denaturant selected from the group consisting of one or more amino acid denaturants, imidazole, and one or more amino acid denaturants plus imidazole.

Claim 23 (amended). The method of claim 9, further comprising (c) [incubating said isolated desired target nucleic acid molecules under conditions sufficient to synthesize] synthesizing a nucleic acid molecule complementary to said desired target molecules[, thereby] and forming double-stranded nucleic acid molecules.

Claim 27 (amended). The method of claim 26, wherein said nucleotide analogs are [a] methylated nucleotides.

Claim 36 (amended). The method of claim 35, wherein said enriching [enrichment] comprises separating the desired nucleic acid molecules according to size.

Claims 41-71 are newly added.